

# A NEW AND UNIFORM METHOD OF RECORDING THE HEARING POWER IN OTOLOGICAL PRACTICE.

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In otological practice we constantly feel the necessity for a reliable test for the hearing. For want of anything better we use the ticking of a watch, the voice spoken and whispered, tuning forks, &c. &c. The accuracy with which we measure the visual power by Snellen's test-types, and record the results obtained, cannot be arrived at by means of any of the usual sound makers (sonofactors), nor will it be until an instrument can be made which shall *always* produce uniform tones. These tones must be arbitrarily assented to as relatively, not absolutely, correct, just as the visual angle of five minutes, on which Snellen forms his test-types, is arbitrarily chosen, and "does not afford us an absolute but only a relative value." For this reason the attempt to invent a perfect sonofactor for testing the hearing power should be encouraged. In the mean time the sources of sound already mentioned must continue to be used in recording our observations.

A short formula for expressing the results thus obtained has long seemed to me to be necessary—something approaching the brevity of that used for recording the vision. This is based on the fact that the visual power is expressed by a fraction the numerator of which is the utmost distance at which the types are recognized (d), and the denominator the distance at which they appear at an angle of 5 minutes (D), thus giving the formula  $V = \frac{d}{D}$ . I hold it to be a mistake ever to reduce this fraction to lower terms. If not so reduced,  $V = \frac{1}{10}$ , or  $V = \frac{1}{20}$ , means that type No. 1, No. 10, or No. 20, was read at one, ten or twenty feet, and expresses by its own terms, without any *conventional understanding*, just what test was used. In ordinary usage, the formula  $V = 1$  is intended to express the fact that type No. 20 was read at twenty feet, but it is more simple and straightforward to say in such a case  $V = \frac{20}{20}$ , and it is *very little more trouble*.

To return to the hearing: for nearly three years I have recorded the hearing power as a fraction, the numerator of which is the distance at which the particular sound is heard, the denominator the distance at which it should be heard by an ear of good average hearing power. This denominator must vary according to the sonofactor used, and should generally be expressed in inches.

For still further simplification, and that the method may be adapted to international use, I suggest the following abbreviations: A. D., auris dextra, instead of right ear or R. E.; A. S., auris sinistra; P. A., P. aud., potentia auditus, hearing power; V., vox, the spoken voice; V. S., vox susurrata, whispered voice—or simply S., susurrus, a whisper; H., horologium, the watch.

If this system should become general, then the formula  $P A, A D, H, = \frac{12}{36}$ , would to all otologists represent the fact that a watch that should be heard at 36 inches was heard by the right ear of the patient at a distance of 12 inches; the formula  $P A, A S, V S, = \frac{6}{36}$ , would mean that the whispered voice was heard by the left ear at 6 inches that should have been heard at 36 inches. It is not necessary to multiply examples.

By referring to the records of the Brooklyn Eye and Ear Hospital, I find that I commenced to record the hearing power for my watch as a fraction on the 15th of May, 1869. Its use by my colleagues and myself has been continued since then. On the 21st of September of the same year, I read a paper on the importance of early treatment of the diseases of the ear before the Medical Society of King's County, in which the use of this fractional method was explained and advocated. [From Boston Medical and Surgical Journal, of Thursday, Feb. 29, 1872.]



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